MPA-018: DISASTER MANAGEMENT
Assignment (TMA)

Course Code: MPA-018
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Marks: 50

This assignment consists of Sections I and II. There are five questions in each section. You have to answer a total of five questions in about 400 words each. It is necessary to attempt at least two questions from each section. Each question carries 10 marks.

SECTION-I

1) Define disaster and give an overview of natural disasters in India. 10
2) Briefly discuss various stages in disaster cycle. 10
3) Examine major trends in disaster management. 10
4) 'Risk sharing and transfer pave the way for building disaster resilience'. Discuss. 10
5) Write a note on Community based Disaster Management (CBDM). 10

SECTION-II

6) Explain various rescue methods. 10
7) Evaluate the guiding principles for shelter provisions. 10
8) Write a note on Emergency Operations Centre (EOC). 10
9) Define the rationale of 'First Response' and discuss the role of people as First Responders. 10
10) Analyse the relationship between disasters and development. 10

ASSIGNMENT SOLUTIONS SAMPLE(2021-2022)

MPA-18

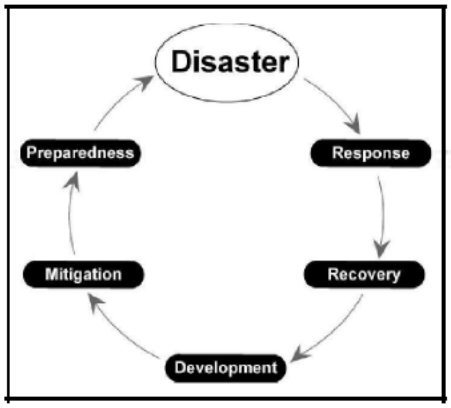
Disaster Management

Disclaimer/Special Note: These are just the sample of the Answers /Solu tions to some of the Questions given in the Assignments. These Sample Answers /Solu tions are prepared by Private Teacher/Tutors/Authors for the help and guidance of the student to get an idea of how he/she can answer the Questions given the Assignments. We do not claim 100% accuracy of these sample answers as these are based on the knowledge and capability of Private Teacher /Tutor. Sample answers may be seen as the Guide/Help for the reference to prepare the answers of the Questions given in the assignment. As these solutions and answers are prepared by the private Teacher/Tutor so the chances of error or mistake cannot be denied. Any Omission or Error is highly regretted though every care has been taken while preparing these Sample Answers/Solutions. Please consult your own Teacher/Tutor before you prepare a Particular Answer and for up-to-date and exact in formation, data and solution. Student should must read and refer the official study material provided by the university.

SECTION-I

Q. 2. Briefly discuss various stages in disaster cycle.

Ans. The Disaster Cycle: The disaster cycle includes all the phases of disaster management. The diagram given below shows a disaster cycle:



(i) **The Disaster Event:** It implies the time and duration of a distaster and the elements that are affected by it. An earthquake takes a few seconds to cause devastations in a large area. It can change the entire lan dscape in

a few seconds. Tsunami can modify the physiography of affected areas. Floods can take relatively longer period to affect an area. Disasters cause loss of life and damage property. Weak structures such as informal settlements get easily damaged by a disaster. Weaker sections of society such children, women, aged and disabled people suffer more than the normal people. The poor also suffer more than the rich because poor people live generally in hazardous physical areas such as fishermen live closer to sea and farmers near flood prone areas. The poor also lack capacity to recover after a disaster strikes. Fishermen loose their boats and farmers loose their crops. They fall prey to epidemics and other fatal diseases.

Thus, disasters require multi-faceted response which can take account of all types of ramifications.

(ii) **Disaster Response:** Disaster Response tackles all the challenges when a disaster strikes. It involves rehabilitation of affected people, restoration of physical facilities and reconstruction of the damaged infrastructure. Effective disaster response depends on preparedness, logistics, procedural simplicity, speed and expert ise . The most important requirement and the basic is strong infrastructure and service support base. Disaster losses and damage aggravate in case of inefficient adminis tration, poor institutionalization of development planning, unresponsive administration and poor informational and logistical arrangements.

Disasters expose the failure or efficiency ofa system. Outside aid is also gets misused because of unfamiliarity with local situation and corruption in disbursements. Pressure for disaster management policy is not strong enough in developing countries since in them risk perception of disasters is low. Thus, external bodies such as the UNDP and International Red Cross and Red Crescent Societies may not always be guided by local concerns. Thus, proactive planning for disaster response is very import ant, especially in developing countries, for reducing the potential of hazards.

Effective preparedness, filling gaps, or lack of social cohesion, among different actors, and long-term mitigation policy to minimize vulnerabilities and their successful implementation are required for disaster response.

Significance of Response

Disaster response is important because it minimises losses. About 80 percent of disaster victims are affected by natural disasters. For insurance firms, natural disasters account for 85 percent of the total insured catastrophe losses worldwide

As World Disasters Report (2003) indicates, ethics in humanitarian assistance is important. Millions of disaster victims do not get humanitarian aid and protection. In disaster response, it points out that saving people from death is not adequate. It is equally important is respecting people's dignity and their livelihoods. Humanitarian organisations thus must put humanitarian principles into practice and adopt good practice in humanitarian judgement. They should work with local communities , especially the segments which are most vulnerable.

Long-term investment in disaster mitigation at the local level has been more effective than any global aid initiative . Only five people were killed in 2001 when the worst hurricane in sixty years hit Cuba. This is because of effective local mechanism which successfully evacuated 700,000 people just before the disaster struck.

The average amount spent on disaster response is very less as compared to the average annual cost of disasters. In the past 25 years, the average cost of natural disasters is more than US$ 87 billion a year, whereas the average amount annually spent on response is US$ 3 billion. The average annual global military expenditure (about US$ 780

billion) is much more than what is spent on disaster mitigation. The number of disaster victims depending on humanitarian aid is increasing by years. The total number of such people rose to 40 million in 1996 from 25 million in the 1980s.

Reluctance to spend in measures that minimise disaster impacts leads to loss of thousands of lives. Spending on disaster mitigation would better serve the objective of disaster management because rampant corruptions in relief disbursements and profit motive of actors have adversely affected the disaster response efforts.

If disaster mitigation is included in the development process, it can reduce economic losses from disasters. However, efficient and quick disaster response is the quick solution to minimise disaster losses.

Preparedness in terms of logistics such as medical facilities and temporary shelters is very important in disaster response. There are cases when governments have suffered political losses after a disaster. For example, after floods hit Central Europe in 1997, the Polish ruling party suffered election loss due to its bad handling of the disaster.

Issues in Disaster Response

Co-ordination among actors involved in disaster response is very important. Local infrastructure has also to be strong. Besides if local governance is not sufficiently institutionalized, service delivery will be ineffective. Common administrative problems also create vulnerability in the aftermath of a disaster. Negative sociological dynamics such as rural to urban migration creates further difficulties in urban areas. Often it leads to ethnic and communal violence.

Civil society is playing a significant role in disaster management. It is emerging as a fresh hope in the new world order. In the wake of globalisation and weakening states, civil society has emerged as a solution. Civil society has been a protection mechanism for the people. It has been challenging arbitrary political regimes. Civil society is also integral part of a culture. Civil society works under the state. There are some shortcomings. Civil society becomes suspect with regard to national security due to their global connections. Civil society is also generally non-co-operative with the state. For example, non-government organisations withdrew midway during the Marathwada earthquake. They also create unnecessary chaos during disaster response. Thus, in emergency situations to avoid chaos and confusion, the domains where civil society participation is required should be mentioned.

Change in government attitude is required to involve civil society in disaster management. The government considers disaster response as a piecemeal business and it is the duty of its revenue department to undertake it. Involvement of the public is viewed as an obstacle. The administration views people as passive recipients of largesse it offers and not as partners who can contribute in the initiatives it undertakes. The belief is also that the government and non-government cannot work in coordination. It is suggested that social capital should be strengthened during normal times and should be tapped during emergencies in organized collective effort. The need during a disaster is that government and civil society should work in tandem for effective disaster management.

People's participation is the most desirable virtue in good governance. Participation of people succeeds only when it is invoked by the state. It would not be effective if the state has not taken any interest in it.

(iii) **Recovery:** It refers to the activities which are implemented to promote reconstruction after a disaster. It includes measures like rebuilding of damaged houses, school, hospital and other public buildings. It aims to restoring life to normal or improved levels after a disaster happens.

In this phase, community resilience is required in recovery. Recovery includes three phases: Emergency relief, rehabilitation and reconstruction.

1. Emergency Relief : It involves actions which are taken to meet the basic requirements of survivors. It includes providing shelter, water, food and medicines to the victims of the disasters.

The activities during this phase are rescue , immediate relie f, needs assessment and debris clearance . Civil society's voluntary effort, ifinstitutionalized as support to the government rescue and relief works, it minimises loss of life and property in this phase.

2. Rehab ilitat ion : It refers to actions aims at providing alternative shelter, livelihood psycho-social support to the people affected by the disaster. The affected people may be provided with temporary hous in g, economic rehabilitation through alternative employment options and psycho-social rehabilitation through psychosocial counselling and medication .

Activities during rehabilitation depend on situatio ns, condition of the physical landscape in the affected area, state of economic activity on which people depend for their livelihood and whether resumption of normalcy could happen in the area itself.

Rehabilitation generally has short-term outlook and it is implemented unplanned and as temporary measures. According to a **UNDP** study, disaster preparedness and prevention is most effective when it has long-term perspective with an aim to improve economic growth and social opportunity. Such an approach was undertaken in Marathwada with certain benefits.

During rehabi li tation , people should not feel that government welfare schemes for relief are their permanent source of livelihood. They should stand by themselves with the support of emergency relief.

People involved in rehabilitation activities should be trained to pay special focus on widows and orphans, with regard to their health and livelihood. Community participation in rehabilitation activities is also important.

3. Reconstruction: It refers to the reconstruction of residential buildings and infrastructure such as roads, bridges and other communication links. The aim is to improve long-term development prospects and not reproducing the same conditions which was there before the disaster strikes. Reconstruction thus includes disaster mitigation measures.

Now urban planning has post-modem approach. Diversity has replaced modernist emphasis on uniformity. Indigenous knowledge has been included to produce viable structures in disaster prone areas. More differentiated housing and open spaces has replaced old cluster perspective to housing. People should reach out to each other during this phase and help rebuild their lives.

4. Development: This phase refers to the actions taken for development and overall progress of the community for which plans and policies are made. Development plans take into consideration hazard and vulner ability. The emphasis in the plan should be how to prevent disasters and minimise impacts if it happens. It should be effective prevention and preparedness measures. It should be the idea instead of thinking disasters are inevitable to happen.

Emphasis should be given to sustainable development which means meeting the present requirements without compromising the capacity offuture generations to fulfill their requirements.

Illustration of Disaster Cycle through Case Study

The Gujarat earthquake of January 26, 2001 which killed thousands of people and destroyed hundreds of thousands of houses, can be taken for case study.

The state and Central Governments responded quickly with large scale rescue and relief. The Armed Forces were involved. Hundreds of NGOs rushed with relief materials and personnel to help in the rescue and relief operations. The affected people were provided with food, medicines, clothing, beddings, tents and other commodities.

Reconstruction activities were started by May 2001. This included long-term recovery plans, construction of community buildings and reconstruction of damaged houses and infrastructure. The affected people were provided with alternative livelihood.

Many of the reconstruction projects in a couple of years had become developmental programmes. The region got better infrastructure, good roads, water distribution networks, communication networks, new schools, hospital and community buildings.

Emphasis was given on safe development practices. New buildings were built with earthquake resistant designs. Older buildings were retrofitted to make them resistant to future disasters. Local people were trained on disaster resistant construction. Since the region is also vulnerable to drought and cyclone, construction resistant to cyclone and water harvesting systems to tackle drought were introduced.

For disaster preparedness, the government and the NGOs launched community awareness campaigns. People were informed what to do and what not to do. Teachers, students and parents were trained. Drills and plans were introduced. All these led to a higher-level of preparedness among the people.

In 2004, a cyclone warning was responded to with a very efficient evacuation. The people were already informed how to react in an emergency situation. In June-July 2005, major floods hit the region and the government and the NGOs knew how to respond. The relief and rehabilitation were very smooth and losses were minimized.

This case of Gujarat shows the disaster management cycle included rehabilitation, reconstruction and preparedness after the earthquake hit the area. Then disaster happened again, but the losses were minimized and people were evacuated effectively.

Risk Reduction: Mitigation and Preparedness

In the efforts to mitigating the impact of disasters, the Risk Reduction Framework is the latest in the list. Its precursor is the Total Disaster Risk Management Approach (TORM).

Japan suffered heavy losses in the 1959 typhoon. A boat capsized in Bangladesh cyclone in May 2002 killing 450 passengers. These losses could have been prevented had there been close cooperation between concerned agencies.

The TDRM Approach

The following are the strategic objectives of the TORM Approach:

1. Address the concern and gaps in the disaster management cycle taking into account causes of disasters and the various factors in disaster risk and its management.
2. Improve ability in disaster risk management and develop reliable database for reference in policy-making.
3. Promote coordination and collaboration among various stakeholders in disaster response.

The following are the proposed implementation strategies:

1. Effective disaster reduction and response through cooperation and collaboration among all concerned stakeholders. Emphasis should be on networking by harnessing positive organizational capacity.
2. Decisions are taken on the basis of information drawn from hazard mapping and assessment of vulnerability.

3. Improve co-ordination among stakeholders in disaster response through accurate and reliable information. To achieve this objective, an efficient disaster risk management information system linked to local early warning systems, local authorities and the media should be set for easy flow of information among various stakeholders.

4. All the required mechanisms including policy, structure, capacity building and resources for disaster reduction and response should be in place.

Mechanisms which are required for effective implementation of the TORM Approach are polic y, proper system and structure, improved capacity, resources and implementation of policies.

1. Policy in the form of a law, plans , guidelines, or protocols should be developed through consultation and strategies . The policy should define the objectives of the community with regard to disaster response and should address the gaps in the disaster management cycle.
2. A system with proper structure has to be set-up to facilitate and ensure coordination among various stakeholders.
3. Local and national capacity has to be improved to implement disaster response measures effectively.
4. Resources including funds and man power are required for disaster reduction and response .
5. The disaster risk management process has to effectively be implemented for better decision-making and for ensuring the best utilization of limited resources.

There are six systematic steps in the disaster risk management process:

1. Setting-up the disaster risk context for effective disaster response ,
2. Finding out the disaster risks,
3. Analysing the risks,
4. Assessing and prioritising the risks to take measures,
5. Taking measures to reduce the disaster ris ks, and
6. Monitoring, reviewing and communicating for effective disaster management.

Pertinence of TDRM for Disaster Management Cycle

The TORM Approach addresses various concerns and gaps in the disaster management cycle. It focuses on the causes of disas ters, the conditions of risks and the vulnerability of the comm unity. It also emphasizes on collaboration among stakeholders. This approach could serve as a framework for policy action in identifying and addressing the gaps in existing policies. Hazard mapping and vulnerability assessment is also given importance in this approach.

The TORM Approach provides a creditable strategy for disaster management. Enhanced efficiency and cost effectiveness are important features of this approach. Explo ring opportunities and taking initiatives to implement the TORM Approach at the grassroots level is a major challenge. The purpose is to reduce the risk of disasters. Consensus and political commitment at the highest level is required for adopting the TORM Approach.

The objective of TORM is to reduce risk. The earlier approaches to disaster management are comprehensive approach, integrated approach, prepared community approach and developmental relief approach. The TORM includes all concerns with an objective ofOisaster Risk Reduction.

Risk can be reduced through long-term and short-term mitigation measures:

1. Long-term Mitigatio n: Mitigation includes measures taken to reduce the effect of the hazard and the vulnerable conditions to minimise the potency of a future disaster. Mitigation activities thus can focus on the hazard or the elements exposed to the threat.

Mitigation measures depend on hazard type. For inst ance, measures in drought prone areas will differ from measures taken in earthquake prone areas.

Mitigation measures should reduce vulnerabilities. It can also address issues like distribution of wealth, ownership of land and tenancy rights.

Some common mitigation measures are assessment of hazard and risk, analysis of vulnerability, vulnerability reduction strategies, mitigation activities, building disaster-resistant infrastructure, spreading awareness among the people and preventing habitation in high-risk areas.

2. Short-term Preparedness: It includes measures taken to get ready for any future disaster such making effective emergency plans, setting-up an warning system, evacuation plans, holding inventories and training of personnel on disaster response. These measures enable individuals, communities and governments, to respond quickly to disaster situations. The aim is to minimise loss of l ife, damage to properties and disruption of essential services.

Some common preparedness measures are forecasting for any disasters, emergency plans for immediate disaster assist ance, working to spread community awareness and education about disaster and response and preparing the community for disaster management plans.

The disaster cycle includes:

(i) The disaster event,

(ii) Disaster response,

(iii) Recovery,

(iv) Development.

(i) **The Disaster Event:** This is the time and duration of a distaster. An earthquake can change the entire physical landscape in a few seconds. Floods can take longer time to affect an area. If it is a flash flood it can change the landscape in hours. Disasters also affect the weak structures the most. Disasters also affect the weaker sections more such as children, women, aged and disabled people. Disasters also affect the poor more than the rich because poor people live generally in hazardous physical areas.

(ii) **Disaster Response:** Disaster Response involves rehabilitation of victims of disasters and restoration of the damaged infrastructure. It is significant because it reduces losses and damage to property. Co-ordination among various stakeholders in disaster response is very important. People's participation is the most desirable virtue in good governance. Participation of people succeeds only when it is invoked by the state. It would not be effective if the state has not taken any interest in it.

(iii) **Recovery:** It includes activities implemented for reconstruction after a disaster strikes. It has three phases: Emergency relief, rehabilitation and reconstruction.

Emergency Reliefincludes providing shelter, water, food and medicines to the victims of the disasters. Rehabilitation aims at providing alternative shelter, livelihood psycho-social support to the people affected by the disaster. Reconstruction involves rebuilding of residential buildings and infrastructure such as roads, bridges and other communication links.

(iv) **Development:** It includes activities undertaken for development and overall progress of the community. Development plans considers hazard and vulnerability. The plan focuses on preventing disasters and minimising its

impacts. Emphasis is given on sustainable development which means meeting the present needs without compromising with the ability offuture generations.

Q. 3. Examine major trends in disaster management.

Ans. Trends In Disaster Management Preparedness: The post-disaster situation can be worse than the disaster event. Thus, preparedness towards disaster reduction should be given importance.

Rapid population rise and increasing human settlements in disaster prone areas are putting more people and their assets to the risk of natural hazards. The number of disasters worldwide has increased three times in the past ten years. Economic losses have surged to eight times exceeding US$ 60 billion per year.

Natural hazards like floods, earthquakes and cyclones are a part of our environment. Preventive measures can be taken to reduce the impact these natural hazards. Thus, its worst effects can be minimized . Everybody gets affected by natural disasters. The weaker sections however are the most affected by natural disasters.

National governments, International and regional organizations, private firms, local administrations and voluntary organisations are involved in disaster management , but what is required is involvement of all communities so that lives cam be saved before the disaster happens.

Principles of Mitigation and Preparedness

The following principles should be adopted before disaster mitigation and preparedness activities are undertaken before any disaster strikes.

- Assessment of risk.
- Priority should be given to disaster prevention and preparedness.
- Disaster prevention and preparedness should be incorporated in developmental policy and planning at various levels.
- Effectivecommunication about impeding disasters is very important for disaster prevention.
- Participation of the local community at various levels makes disaster prevention more effective.
- Application of proper design and patterns of development can reduce vulnerability.
- International cooperation to share technology to prevent disasters is crucial and technology should be available to all.

Every country has the responsibility to protect its people and its assets from the impact of disasters. The need of the hour is that the international community should come together to utilise their resources to prevent disasters so that the losses to humam lives and the damage to property can be minimized.

Preventive Planning

India has taken up the issue of disaster management and mitigation. It has now long-term planning and preparedness for disaster mitigation. It also has become part of the development planning in the country. It is using science and technology in forecasting and warning systems, cropping systems and disaster resistant construction.

The government has introduced a number of special programmes for disaster mitigation and reduction of its impact. The local communities have also developed indigenous mechanisms to cope with the impacts of disasters. The national capacity towards disaster management gets strengthened by spontaneous mobilization of community and support from non-governmentorganizations.

Despite all these, the losses caused by disasters in India are still high. The country is focusing on some key areas such as connecting disaster mitigation with development plans, effective communication, public awareness and education campaigns, involvement of private sector and the community, strengthening of institutional mechanism and international cooperation for technology transfer.

The community and the voluntary organisations have been given importance since they provide the best response to disasters on the ground. Preparation and mitigation efforts are also the most effective at community levels. Thus, the Community Based Disaster Management is emerging as the most appropriate way of dealing with disasters.

Q. 5. Write a note on Community Based Disaster Management (CBDM).

Ans. Concept Of Community Based Disaster Management (CBDM): CBDM was given importance in the 1980s even as community based disaster initiatives were already undertaken in various parts of the world.

CBDM has been included in the government policy despite its popularity in the past several years. The common notion was that the grassroot organizations and NGOs should undertake CBDM. Two major aspects are:

(i) CBDM has been a local initiatives and not been accepted in other parts of the country.

(ii) CBDM has not been included in national disaster management activities and national development policies. Thus, the need is a framework to include CBDM into national policy.

In 1995, when earthquake struck Kobe and other parts of in Japan, about 85 percent of the people were rescued by the locals or self-evacuated. This should how important is the community during a disaster.

The involvement of the communities and neighbourhoods in relief and rehabilitation programme and in recovery process is the key to achieve the objectives.

PRINCIPLES, STRATEGIES AND CHALLENGES

The following are some of the basic principles with regard to CBDM:

(i) The community owns and lead planning, implementation and management.

(ii) Resources, capacities and partnerships available locally are used.

(iii) The community take decide and make choices on activities.

(iv) Focus is to improve the coping capacities of the local.

(v) The approach is based on development of the community.

(vi) The focus is also given on sustainability.

(vii) Vulnerable groups get special attention.

For desired impact, these principles have to be implemented. The following are the most commonly used strategies and actions:

Public Awareness

Creating public awareness is the most important in CBDM. Awareness creates an environment and a demand for intervention with linkages with resources. Community meetings, events, media and other activities are used to spread awareness among the people. People should also be informed about policies and programmes introduced and implemented by the government for their benefit. Right to information is another way to inform people about various programmes of the government.

Of course, certain information related to security and public safety are however restricted. Cabinet papers, records of the council of ministers and other officials are also excluded for disclosure under the right to information.

Research and Documentation

Research and documentation on the community and various interventions are also required. Information about caste and other ethnic identifications are also needed for disaster response. Lack of cohesion in the community and biases lead to ineffectiveness. Women and children lose out due to social biases. Understanding the details about the community is crucial for CBDM. For instance, people face higher risk of heat waves in communities where elders are left alone.

Understanding about physical vulnerability of infrastructure periodically is also required for their improvement. They should be mapped and constantly updated. Surveys, monit oring, evaluation and mapping have to go on together. Studies , whoever carried out, should be unilateral. Measures suggested by vulnerable communities should be taken to improve their capacity to cope with.

Capacity Building

Improving the capacity of the community is the key in CBDM. This would strengthen the staying power of the community. Local capacity building should not depend on external assistance and the communities should be able to take care of their requirements. Capacity building means better emergency response and taking developmental activities to reduce the effects of any disaster in future.

The World Disaster Report 2004 suggested new approach in place of the traditional risk reduction. Instead of starting with hazards and risks and then making linkages with development , it stated that developmental activities can be carried out from the start. Measures like drought-resistant crops, rainwater harvesting, social forestry and fish-farming can reduce the threat of disasters such as droughts and floods.

Emphasis has now been on projects which can generate income for the community, instead of providing relief items in the aftermath of disaster. All organizations are now trying to ensure that affected community get compensation or soft loans to rebuild their homes.

Skill upgradation of the community member is an important measure for capacity building. Other essential resilience measures can be local warehousing and creating alternate livel ihood options for the communities. Connecting disaster reduction programmes with livelihoods, setting up oflocal contingency funds and local task forces, introducing entrepreneurial model for operating community programmes are also effective sustainable measures.

The following are the six policy prescriptions stated in the World Disasters Report of2004 in this regard:

(i) Effective assessment to know what is required for the communities to recover from and adapt to risks.

(ii) Good governance is required for building an environment which facilitates the more resilient communities to prosper.

(iii) The main objective of disaster interventions should be strengthening social capital.

(iv) Resilience oflocal livelihoods can be improved with new institutional strategies and inter-sec-toral coalitions.

(v) Humanitarian aid and disaster risk management can be improved with approaches focused on people.

(vi) The greatest challenge is improving strategies as per the aspirations and capacities of the community-at-risk.

Networking

Social networking is important step for developing partnerships which enable the people to capitalize on available resources. It brings down costs and provides more benefits. Different stakeholders such as other communities, local governments, higher governments, NGOs and corporate houses can be involved through partnership .

All social ties are involved in social capital. Studies also have used different levels to analyse social capital such as communities , provinces or regions and countries. According to studies, two of the three communities affected by the Red River flooding in Manitoba, Canada in 1997 with a higher stock of social capital succeeded in organizing themselves more rapidly and efficiently than the third with a lower stock of social capital.

The following are the three indic ators of social capital mentioned in the World Bank studies:

(i) Trust in others and trust in institutions such as government authorities, police and politicians is the major element of social capital.

(ii) Civic engagement involves people in social and political matters. It is volunteerism of people in taking part in social and political matters.

(iii) Social networks are formed by people with their immediate networks such as close family, friends and neighbours. The secondary networks are formed through relationships that individuals make during community or religious activities.

Sustainability

Sustainability is another indicator of success of a programme. Sustainability can be through risk reduction and developing a culture of prevention. According to a study, villagers from Patanka in Gujarat devastated by an earthquake of 2001 rebuilt their homes stronger than before with humanitarian aid. Farmers severely affected by drought were retrained as masons and engaged in building earthquake-resistant houses. Villagers also could access government funds and created new rainwater-harvesting system that helped their health and crop yields. Similarly in the Samiapalli village of Orissa, with the help ofa local NGO, villagers were involved in the development programme. They built disaster-proof homes . The houses saved both lives and livelihoods when the super cyclone of October 1999 hit the village.

SECTION-II

Q. 6. Explain various rescue methods.

Ans. LOGISTICS AND METHODS

Search and Rescue Kits

In a dis aster situation, SAR kits are the most important. They should be kept in convenient locations and local people shou ld be trained to use the kits. SAR kits generally have map of the area or building, he lmet , hand gloves, hard shoes , dust mask , Hammer, screw driver, axe, spade, pic kaxe, 50-foot rope, torch and battery cells.

Simple Rescue Methods

Rescue equipments are helpful for carrying out rescue operation, but if equipment is not available it can be undertaken in ordinary methods.

There are two types of methods for rescuing the affected people. They are:

(i) Single Person Methods, and

(ii) Two Person Methods.

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A. Single Person Methods

Firemen's Lift

If the victim is unconscious and there is one rescuer, this method is used to undertake rescue operation. The victim is laid on his abdomen. The rescuer lifts the victim by his armpits and positions him in such a manner that the neck of rescuer stays below the waist of the victim.

Human Crutch

Human Crutch is used if the victim is injured in one of his legs. First, the rescuer ties the wounded leg of the victim with his opposite leg with a handkerchief. If the right leg is injured, the rescuer will tie the injured leg with his own left leg. Then he holds the vic tim's waist and let the victim walk slowly by supporting his wounded leg.

Pick a back

Pick a back method is used if the victim in injured on his leg and is unable to walk long dis tances, but can use his hand to support himself. First, the rescuer gets down on one knee and let the victim to fall on his back. The rescuer then holds the victim at the thighs and the victim get supports on the rescuer 's neck.

Staircase Drag

Staircase drag method is used if the victim is unconscious and trapped in the upper floor of the affected building. First, the victim is laid down on his back. The hands and feet of the victim are them tied with a handkerchief. After that the rescuer holds the victim's armpits and drags him down the stairs.

Firemen's Crawl

Firemen's Crawl method is used if the victim is unconscious and trapped in a smoke filled area or building. First, the rescuer ties the hands of the victim and then inserts his head in the loop made by the victim's hands. He then drags the affected person to safety by pushing against the ground.

Tow Drag

Tow drag method is used if the victim is located in such a place where there is very little space to undertake the rescue work. Whether the victim is unconscious or not, the rescuer first inserts his feet into the victim's armpits and pulls him out of the place. After taking him out, the rescuer lift the victim appropriately and bring him to safety.

B. Two Person Methods

Fore and Aft

Fore and Aft method is used if the victim has an abdominal injury. Two rescuers are needed to undertake rescue. First, the victim is laid down flat on his back. One rescuer holds the victim from the armpits and another rescuer holds his legs. Both then lift him and take him to safety.

Two Hand Seat Method

Two Hand Seat method is used when the victim has injuries on one leg. Two rescuers first stand face to face on either side of the victim. They then put their arms under the victim 's back below the shoulders, lift him and place their outside arms under his thighs and hold each other's hands. The victim places his hands around the necks of the rescuers.

Three Hand Seat Method

Three Hand Seat Method is used if the victim is injured on one leg and rescuers need one hand to support his one leg. First, one rescuer grasps his own right wrist with his left hand. The second rescuer holds the right wrist of first rescuer keeping his left hand free to support the victim's injured leg.

Four Hand Seat Method

Two rescuers use Four Hand Seat method when the victim is heavy and can support himself with his hand. First one rescuer holds his left wrist with his right hand, grasping the second rescuer's right wrist with his left hand.

Carry Chair

Rescuers use Carry Chair method if the victim is a disabled or a very aged person. The victim sit on a chair and then the rescuers carry the chair to safety.

Knots and Lines

In search and rescue operation, rope is very useful. It is used to lift equipment and rescuing people. The following are various types of knots and lines used during rescue and search operations:

(i) Single Sheet Bend joins two ropes of different thickness.
(ii) Over hand knot or thumb knot is used to tie the bandage. It is a stopper knot. It is also called first aid knot.
(iii) Draw Hitch is used as temporary fastening.
(iv) Double Sheet Bend.
(v) Figure of Eight is used to end a line passing through a pulley.
(vi) Reep Knot is used to join two ropes of the same diameter or thickness.
(vii) Sheep Shank shortens the length of a line.
(viii) Single Bowline.
(ix) Round Turn and Two Half Hitch.
(x) Cats Paw to hoist a hose.
(xi) Running Bowline forms a running noose.
(xii) Black Wall Hitch is used to secure a line to the shank of a hook.
(xiii) Bowline on Bight is used to lower a stretcher or an unconscious person.
(xiv) Carrick Bend is used join two lines without the knots.
(xv) Chair Knot is used to lower an unconscious victim.
(xvi) Half Hitch is used to hoist round object.
(xvii) Claw Hitch is used to secure a line to a round object.
(xviii) Timber Hitch is a simple knot with several loops on it. It used to hoist any odd heavy object.

Rescue Using Chair Knot

Safety precautions needed to be taken while lowering a victim with a line are:

(i) Space should be checked whether it is adequate or not.
(ii) A guideline should be used so that the victim can be prevented from hitting the wall of the building;
(iii) The longer loop should be inserted into the casualty's knees and shorter loop into casualty's armpits.
(iv) Someone should watch below the casualty when lowering the victim.

(v) The line should not pass through hands and it should pass hand to hand.

(vi) The line takes support of a wooden block or some sack.

Search and Rescue Checklist

For assessing the level of preparedness for search and rescue work, the following checklist should be used:

(i) What are the rescue tasks that have to be carried out?

(ii) Who is the person responsible for this task and who will coordinate the rescue activities?

(iii) Is there any procedure to identify and mark risk areas?

(iv) Have search and rescue operations been integrated with other urgent works?

Q. 8. Write a note on Emergency Operations Centre (EOC).

Ans. Emergency Operations Centre (EOC), also known as Control Room, is the main centre from where all disaster activities are coordin ated. There is a principal or key EOC for the country located in the Ministry of Home Affairs at the North Block in New Delhi. This assists the Central Relief Commissioner in performance of tasks during crisis. The Centre is responsible for collecting the information concerning the dis aster, keeping close contact with the concerned State Governments , interacting with the concerned agencies responsible for managing disasters and performing such functions as may be assigned by the Relief Commissioner. Each State and Union Territory in its capital also has a State EOC. The State EOC maintains liaison with the Central Relief Commissioner and keeps the State Government informed of the developments. All the districts in the country also have EOCs, which monitor the rescue the relief operations. To coordinate the entire disaster emergency operation effectively, existing control rooms at the national level, state level and district level are being upg raded. A National Emergency Communication Plan is under implementation. The plan provides satellite-based mobile voice/data/video communication between National EOC/State EOCs/Mobile EOCs and disaster sites. The National Emergency Operation Centre is-being equipped with state-of-the-art communication equipment. The states are being assisted to set up Emergency Operation Centres at the state capitals and district headquarters.

There is a trigger mecha nism , according to which on occurrence of a disaster incident , the authorized person activates the EOC. The Incident Commander takes charge of the situation and according to the Incident Command System (ICS), the concerned persons follow his instructions. The ICS has the inbuilt capability to escalate or demobilize certain persons or other resources depending upon the situation. When the incident is over, the EOC is deactivated.

Emergency Operation Centres operate at National, State and district levels with requisite facilities. The objectives of the EOCs shall be to provide centralized direction and control of any or all of the following functions:

(i) Receive and process disaster alerts and warnings from nodal agencies and other sources and communicate the same to all designated authorities .

(ii) Monitor emergency operations.

(iii) Facilitate Co-ordination among primary and secondary ESF Ministry/Departments /Agencies .

(iv) Requisitioning additional resources during the disaster phase.

(v) Issuing dis aster/incident specific information and instructions specific to all concerned.

(vi) Consolidation, analysis and dissemination of damage, loss and needs assessment data; and

(vii) Forwarding of consolidated reports to all designated authorities.

The EOC will be set up at a suitable location and the building should be disaster resistant so as to withstand the impact of disasters and remain functional during the emergency phase.

Under the National Communication Plan being implemented by the Government, the EOCs at all the three levels shall have a fail proof communication network with triple redundancy ofNICNET ofNIC, POLNET of Police and SPACENET ofISRO in addition to the terrestrial and satellite based communication to ensure voice, data and video transfer.

Under the network, the EOCs/Control Rooms of all the States will be directly connected with the NEOC/ Control Room ofMHA at the National level. The district EOCs/ Control Rooms will be connected with the respective State EOCs/Control Room. All these control rooms will function round the clock basis and will be functional round the year. Suitable personnel will be selected and imparted training in the operation of Control Rooms will be posted to man these EOCs/Control Rooms.

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